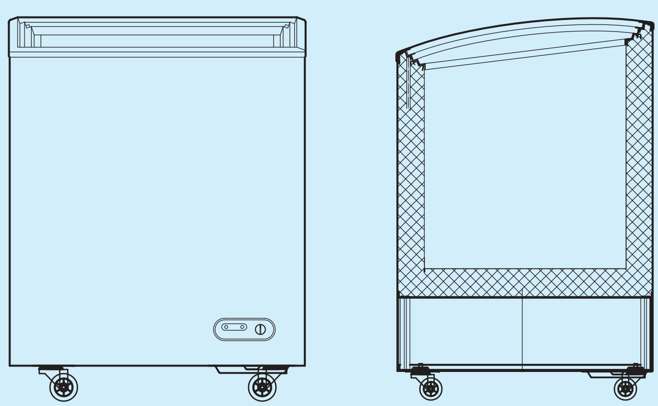
REFRIGERATOR MANUFACTURER
Turbo air
Turbo Air Speed up the Pace of Innovation

CAUTION!
PLEASE KEEP POWER
SWITCH ON BEFORE
OPERATING THIS EQUIPMENT

Chest Freezers Service Manual

Please read this manual completely before attempting to install or operate this equipment!

TSD-27CF



www.turboairinc.com

Specification: Subject to change without notice.

SPECIFICATION	TSD-27CF
Classification	Direct Cool, Manual Defrost, Tropical
Power Source	115VAC, 60 Hz.
Volume	138 Liters (4.9 cu.ft)
Rated Current	2.0 Amp.
Rated Power Input	135 Watts
Power Consumption	1.30 kW·h/24h
High side /Low side pressure	155psig/-2.22psig
Refrigerant	HFC-134a (Tetrafluoroethane) CF_3CH_2F 115gm
Overall Dimension	695(W) x595(D) x 910(H) mm
Net Weight/Gross Weight	45 Kg./50 Kg.

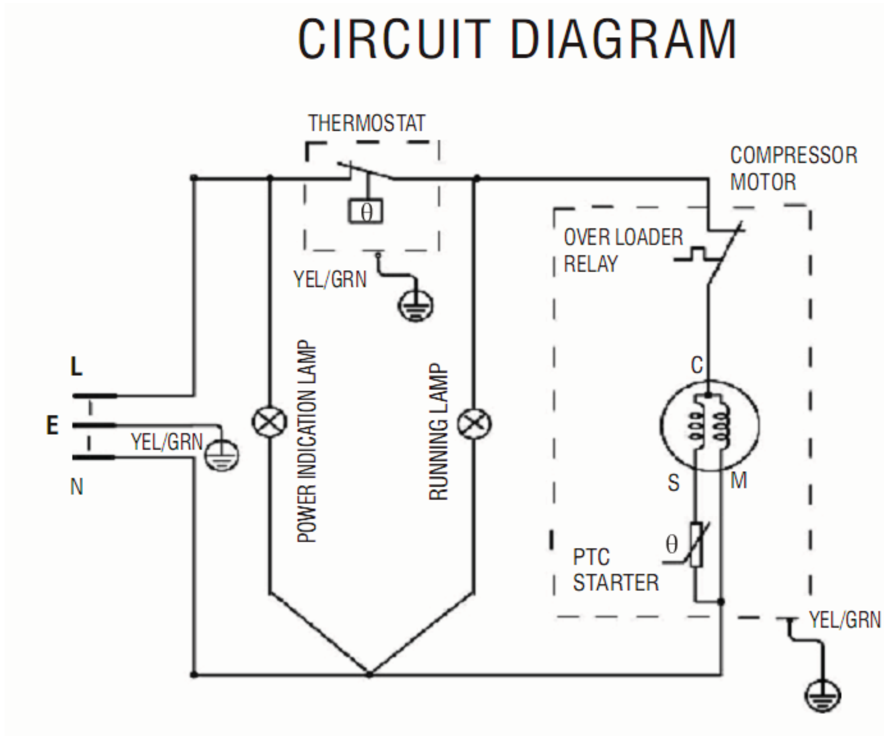
PRODUCT SPECIFICATION

Model		*TSD-27CF*
Classification		*Sliding glass Door, Direct Cool, Tropical*
Color/Door		*White/ with Door Lock Sliding Glass*
Body Finish		*Baked Acrylic Powder Coat*
Temperature Control		*Thermostat*
Defrost System		*Manual Defrost*
Drain		*Manual Drain*
Evaporator		*Tube Type*
Condenser		*Tube Type*
Insulation	*Cabinet*	*Rigid Polyurethane Foam (Blowing Agent CP)*
	Freezer Door	*Rigid Polyurethane Foam*
Refrigerant		*HFC-134a (Tetrafluoroethane)* CF_3CH_2F
Refrigerant Charge (gm.)		*115 gm*
Door Lamp		*None*
Fan Motor		*None*
Compressor		KONOR GQY50AD *135 Watts*
Compressor Oil		*290 ml.POE Polyol Ester (Synthetic)*
PTC Starter		8115PTH7M4R7MC1 (3.8Ω ~ 5.6Ω, Max current 18A/180V)
Overload Protector		11650X011 signT0296/74/T0296/05,B94-130-74,4TM762PBFZZ-51(6.3):Cut temperature:115-125 ℃ ;Close temperature:70-52 ℃ ;Overload current ： 27A;UTC(Min action current):3.36A/70℃
Dryer (Desiccant)		*15 gm.*
Overall Dimension (W x D x H mm.)		695(W) x595(D) x 910(H) mm
Packing Dimension (W x D x H mm.)		*765 (W) x 680 (D) x 970(H) mm*
Net Weight (kg.)		*45kg.*
Gross Weight (kg.)		*50 kg.*

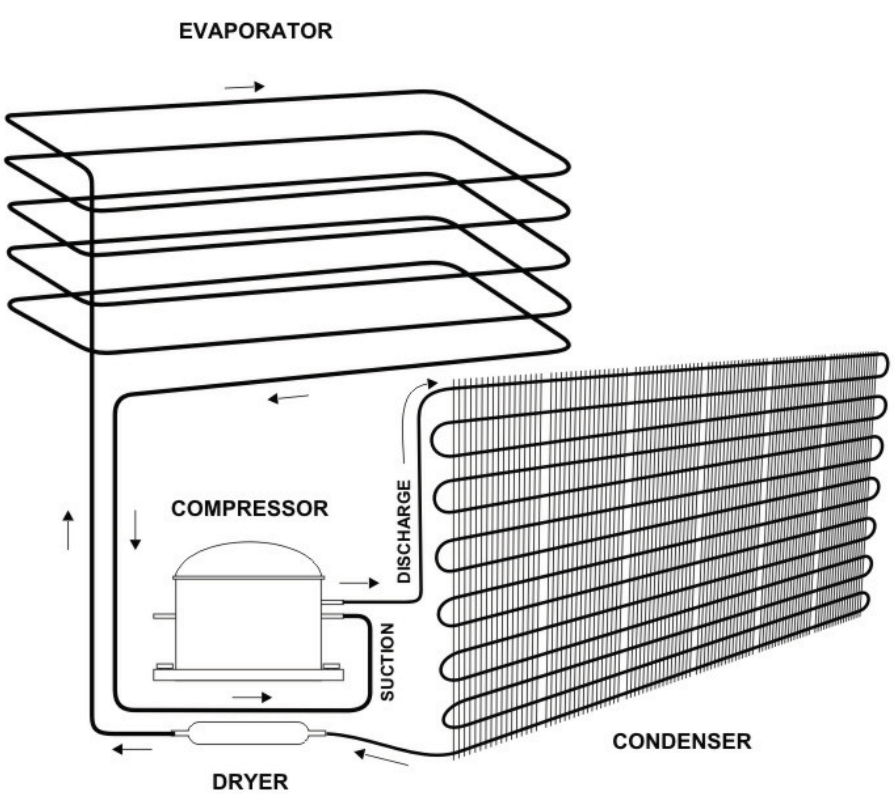
CHARACTERISTIC

Operating Temperature (°C)			
Temperature Control	*Model*		
	Dial Position		
	WARM	*1*	-10.0°C ± 2 °C
	NORMAL	*4*	-15.0°C ± 2 °C
	COLD	*7*	-20.0°C ± 2 °C

ELEC. CIRCUIT: ***TSD-27CF***



COOLING SYSTEM
TSD-27CF

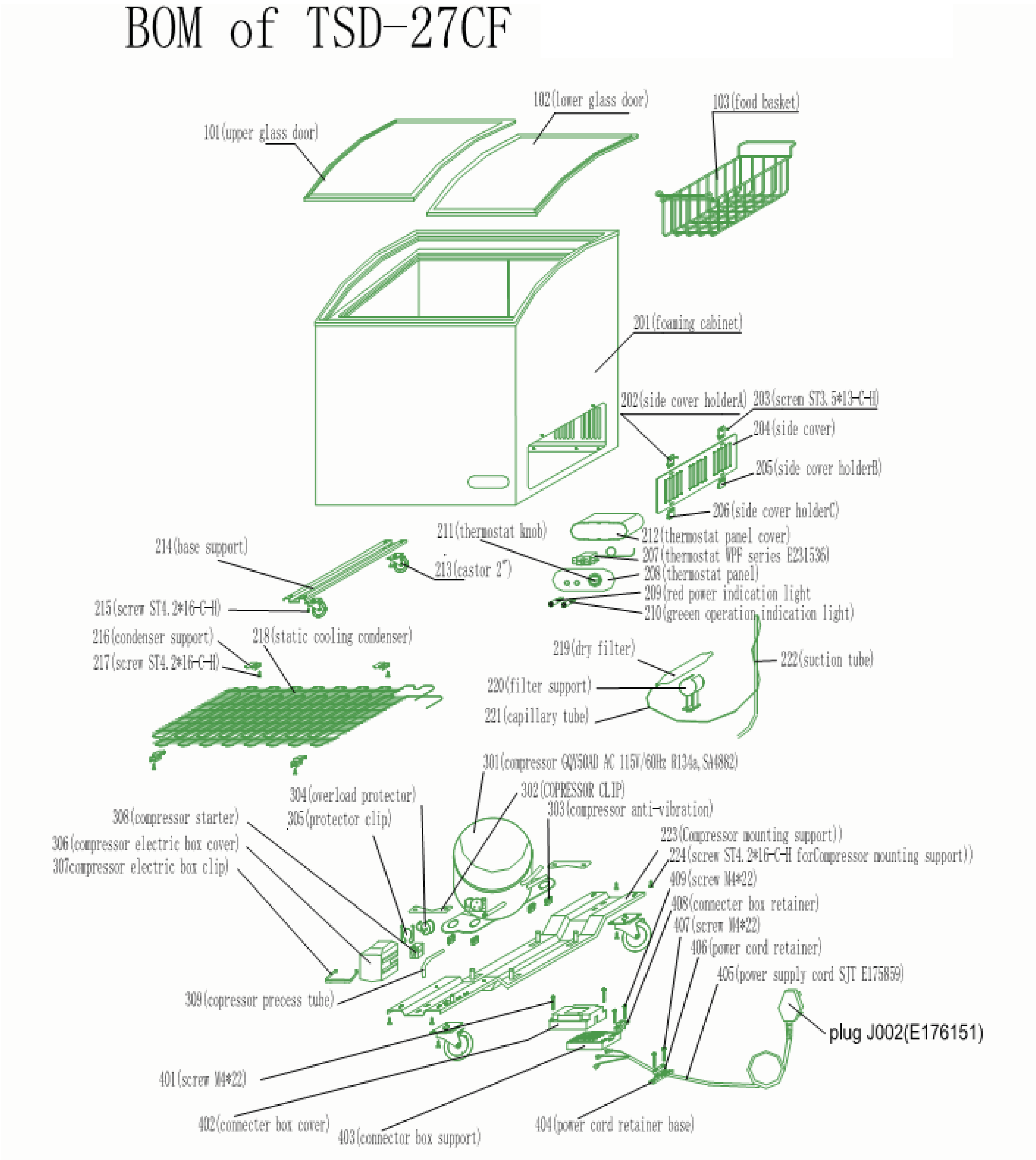


PARTS LIST of TSD-27CF

S/N	Part name	qty
101	Upper glass door	1
102	Lower glass door	1
103	Food basket	2
201	Foaming body	1
202	Side cover holder A	2
203	Screw ST3.5X13-C-H	2
204	Side cover	1
205	Side cover holder B	1
206	Side cover holder C	1
207	thermostat	1
208	Thermostat panel	1
209	Red indicator light	1
210	Green indicator light	1
211	Thermostat knob	1
212	Thermostat panelcover	
213	Castor 2”	4
214	Base support	1
215	Screw ST4.2x16-C-H	4
216	Condenser support	4
217	Screw ST4.2x16-C-H	2
218	Condenser	1
219	Dryer filter	1
220	Dryer filter support	1
221	Cappilary tube	1
222	suction tube	1
223	Compressor support	1
301	CompressorGQY50AD	1
302	Compressor clip	2
303	Compressor anti-vibration gasket	4
304	Over load protector	1

305	Protector clip	1
306	Compressor electric box cover	1
307	Compressor electric box clip	1
308	PTC starter	1
309	Compressor process tube	1
401	Screw M4x22	2
402	Connector box cover	1
403	Connector box support	1
404	Power cord retainer base	1
405	Power cord	1
406	Power cord retainer	1
407	Screw M4x20	2
408	Connector box retainer	1
409	Screw M4x20	2

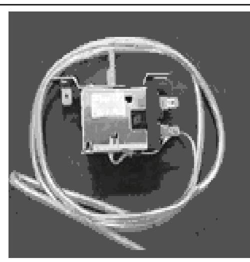
Exploded View of TSD-27CF



CHARACTERISTIC

<table>
<tr><th>Parts Name</th><th>Picture</th><th colspan="4">Check Method and Criterion</th></tr>
<tr><td rowspan="4">Compressor Model :TSD-27CF</td><td rowspan="4"></td><td colspan="4">Measure the resistance with a tester.
(Ambient temperature : Room temperature 25°c)</td></tr>
<tr><td>Model</td><td></td><td>Main Wiring</td><td>Auxiliary Wiring</td></tr>
<tr><td rowspan="2">KONOR GQY50AD
135 WATTS</td><td>Normal</td><td>7 ~8Ω (Approx.)S</td><td>9.9 ~11.3Ω (Approx.)S</td></tr>
<tr><td>Abnormal</td><td colspan="2">Open(∞Ω) or Short Circuited (0 Ω)</td></tr>
<tr><td rowspan="4">PTC Starter Model : TSD-27CF</td><td rowspan="4"></td><td colspan="4">Measure the resistance with a tester.
(Ambient temperature : Room temperature 25°c)</td></tr>
<tr><td>Model</td><td colspan="3">8115PTH7M4R7MC1</td></tr>
<tr><td>Normal</td><td colspan="3">(3.8Ω ~ 5.6Ω, Max current 18A/180V)</td></tr>
<tr><td>Abnormal</td><td colspan="3">Open(∞Ω) or Short Circuited (0 Ω)</td></tr>
<tr><td rowspan="4">Overload Protector Model : TSD-27CF</td><td rowspan="4"></td><td colspan="4">Measure the resistance with a tester.
(Ambient temperature : Room temperature 25°c)</td></tr>
<tr><td>Model</td><td colspan="3">T0296/74/T0296/05,B94-130-74,4TM762PBFZZ-51(6.3)</td></tr>
<tr><td>Normal</td><td colspan="3">Less than 1 Ω (Approx.) Cut temperature:115-125℃ ;Close temperature:70-52℃;Overload current：27A;UTC(Min action current):3.36A/70℃</td></tr>
<tr><td>Abnormal</td><td colspan="3">Open(∞Ω)</td></tr>
</table>

TROUBLE SHOOTING

<table>
<tr><td>Thermostat</td><td></td><td>Repair Procedure
1. Set Thermo Knob to OFF position, pull & straightened feeler bulb
2. Remove Thermostat cover and pull out Thermostat from Thermo Box
3. Short the thermostat terminal and check, if compressor runs.
4. Replace thermostat
5. After replacing Thermostat, reverse steps above.</td></tr>
<tr><td>PTC Starter</td><td></td><td>Repair Procedure
1. Release Relay Cover Fixing Clip.
2. Remove Relay Cover.
3. Remove PTC Starter
4. Pull out PTC Starter, check if open and compare value of resistance with given value, if not
5. Hold receptacle terminal then pull electrical wire from PTC Starter.
6. Replaces PTC Starter (change overload protector together), reverse the steps above.</td></tr>
<tr><td>Overload Protector</td><td></td><td>Repair Procedure
1. Check for continuity on overload protector, if open
2. Pull out Overload Protector.
3. Hold receptacle terminal then pull electrical wire from Overload Protector.
4. Replace overload protector.</td></tr>
</table>

Cause	*Check Point*	**Correction**
Compressor	*Check coils resistances*	**Repair Procedure** *1. Replace compressor if measured resistances differ from given standard* *2. Abnormal noise*
Not cooling	*Check thermostat setting*	**Repair Procedure** *1. Operate unit for 10 minutes with thermostat set at maximum*
Insufficient cooling	*Check gasket gap*	**Repair Procedure** *1. Check if gap can be resolved by adjustment of door hinges fixing screws.* *2. Defrost if accumulation of frost is more than 10mm.*
Malfunction due to leaks or clogged system	*Charged (purge) with nitrogen into the refrigeration system & check for leaks on welds or clogs*	**Repair Procedure** *1. Check for clog or leak in the cooling system.* *2. Repair or replace the clogged or leak section.* *3. Evacuate and change filter dryer.* *4. Purge with nitrogen to clean and check for leaks* *5. Recharge refrigerant, test run and seal system*

TROUBLE	INSPECTION	CAUSES	REMEDY
No Power	Check electric power supply voltage	Open circuit breaker or fuse	Fix or replace
		Open Fuse	Replace
	Check electrical circuit	Worn out or defective A/C cord	Replace
No Light	Check lamp	Open	Replace
	Check lamps socket	Corroded	Replace
Low Cooling	Check for thermo setting	Setting too low	Set thermostat higher
	Check leaks	Deform or warp door gasket.	Adjust door hinges fixing screws
		Poor weld on joints	Repair, purge with nitrogen re-charge refrigerant and test run.
		Over storage or load or heavy frost accumulation	Reduce or re-arrange load or defrost unit
Defective Cooling System	Check Thermostat	Check if compressor runs by shortening thermostat	Replace thermostat if compressor runs.
	Check PTC starter resistance against given value	Open, no resistance or differ from given value	Replace PTC starter.
	Check Overload Protector	Check for continuity	Replace if open.
	Check for leaks	Leaks or poor welds on joints	Repair, re-weld, purge, evacuate and recharge refrigerant
	Check Compressor resistance against given specification	Defective	Replace, weld, purge, check for leaks and re-charge refrigerant, test run and seal system
	Check Pipe System	Clogged Pipe System or oil choke	1. Evacuate then Purge with nitrogen to remove clogs 2. Repair or replace clogged section, evacuate, purge, check leak and re-charge refrigerant. Test Run and seal system